THE
ATMOSPHERIC RESERVOIR
Examining the Atmosphere and Atmospheric Resource Management

Panel of experts reviews NDCMP operations & safeguards

By Darin Langerud

The North Dakota Cloud Modification Project (NDCMP) is one of the longest running, most successful cloud seeding programs in the world. Cloud seeding for the purpose of reducing crop-hail damage and increasing growing season rainfall began in Bowman County in southwestern North Dakota in 1951. Since those early days, the understanding of how clouds produce precipitation, along with the technology of cloud seeding has come a long way. That said, however, there is still room for improvement.

In that light, the North Dakota Atmospheric Resource Board (NDARB) recently convened a panel of experts in weather modification, radar meteorology, numerical modeling, weather forecasting, and law to review the operations and safeguards procedures of the NDCMP.

The panel was chaired by Dr. Harold Orville, Distinguished Professor Emeritus of Meteorology, South Dakota School of Mines and Technology. Dr. Orville has more than 40 years of experience in the field of weather modification and has published more than 80 papers in refereed scientific journals.

Panel members included: Ms. Denise Banaszewski, Attorney, Stokes Lawrence P.S., Seattle, Washington, Dr. James Heimbach Jr., Professor Emeritus of Atmospheric Sciences, University of North Carolina at Asheville, Mr. Leon Osborne, Professor of Atmospheric Sciences, University of North Dakota, Dr. Paul Smith, Professor Emeritus of Meteorology, South Dakota School of Mines and Technology, and Dr. William Woodley, President, Woodley Weather Consultants. We were very fortunate to gain the services of such an experienced and accomplished group of people.

Panel members met in Bismarck on January 7-8, 2003. During the two-day meeting NDARB staff presented information on all aspects of the NDCMP, and answered questions from the panel. The panel began to work on their recommendations immediately, with individual members tasked with specific areas of emphasis. The panel's final report was delivered to NDARB on March 10, 2003.

Some of the more important recommendations and findings of the panel include:

- Conversion of paper-based recordkeeping to an electronic equivalent.
- Prepare a contemporary operational weather forecasting manual to identify data resources and ensure quality control.
- Analyze past seeding cases to better determine the effectiveness of operations.
- Collaborate with other states interested in hygroscopic seeding for hail suppression and/or rain enhancement.
- Overwhelming evidence suggests that dry ice and silver iodide seeding pose no environmental problems.
- A study of the downwind effects of the NDCMP should be undertaken.
- Continue to utilize NDCMP safeguards procedures.

Much of this work is already underway. An electronic recordkeeping system for both meteorological and aircraft operations is under development and will be field tested this summer.

Two separate studies, through the U.S. Bureau of Reclamation's Weather Damage Modification Program, will review the extent of NDCMP impacts outside the target areas.

Work has also started in addressing NDCMP operational weather forecasting.

Though work has already begun, a lot of additional work will be required to address all the recommendations from the Operations & Safeguards Committee. NDARB staff intends to tackle these issues head-on as resources allow. We will provide updates as significant progress is made. ■

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